

## **ABSTRACT OF THE DISCLOSURE**

To intraoperatively generate an updated volume data set in which a volume data set representing image information of biological tissue is reconstructed from a series of  $n$  2D x-ray projections of the biological tissue, one version, in intraoperatively acquired  $m$  2D x-ray projections of the biological tissue the 2D contour of the biological tissue is segmented and this is back-projected in the reconstructed volume data set. In another version, in the volume data set the 3D contour of the biological tissue is segmented and this is projected in intraoperatively acquired  $m$  2D x-ray projections of the biological tissue. The 3D contour is virtually repositioned by projection in the  $m$  2D x-ray projections in the volume data set, until its projection is substantially congruent with the image information of the biological tissue in the respective 2D x-ray projections. In both versions, a volume data set updated around the intraoperatively determined 3D contour of the biological tissue is generated.

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